

Compilers, Spring Term 2021  
**Assignment 2**

Due on June 25, by 23:59

---

Write an SDD for a CFG that generates the language  $\{a, b\}^*$  such that the start variable has an attribute *check* whose value is 1 if the generated string is of the form  $uv$  where  $|u| = |v|$  and the number of *a*s in  $u$  is strictly greater than the number of *a*s in  $v$ . Otherwise, the value of *Check* is 0.

*In constructing the SDD, make sure that the only operations performed on attributes are assignments, additions, subtractions, multiplications, and equality checks; an equality check is an expression of the form  $x == y$  whose value is 1 if  $x$  is equal to  $y$  and is 0 otherwise. (Note that inequality checks are not allowed.)*